WHAT IS CLAIMED IS:

1. An optical disc writing parameters optimizing system, comprising:

means for acquiring a variable of a mark runlength;

means for determining a modulation amount of the writing parameters; and

means for modulating the writing parameters.

2. The device according to claim 1, further comprising means for judging whether the writing parameters need to be optimized.

3. A method for optimizing an optical disc-writing parameters, comprising the following steps:

a) acquiring the variable of a mark runlength;

b) determining a modulation amount of the writing parameters based on a relationship between the variable of the mark runlength and the modulation amount of the writing parameters; and

c) modulating the writing parameters.

4. The method according to claim 3, wherein the step (b) further comprising:

(b1) determining a variable of the physical mark length based on the relationship between the variable of the mark runlength and the variable of the physical mark length ;

(b2) determining the modulation amount of the writing parameters based on

the relationship between the variable of the physical mark length and the modulation amount of the writing parameters.

5. The method according to claim 4, wherein the relationship between the variable of the mark runlength and the variable of the physical mark length in step (b1), comprising:

influence relationship of the variable of the physical mark length on the variable of the mark runlength.

6. The method according to claim 5, wherein the influence relationship between the variable of the physical mark length on the variable of the mark runlength comprising:

relationships between the variable of the physical mark length and the variable of the mark runlength, as well as the characterization amounts of the influence degrees of the variable of the physical mark length on the variable of the mark runlength.

7. The method according to claim 6, wherein said characterization amounts of the influence degrees including:

influence coefficients of the variable of the physical mark length on the variable of the mark runlength.

8. The method according to claim 3, wherein said writing parameters include a

plurality of writing parameters.

9. The method according to claim 7, wherein the relationship between the variable of the mark runlength and the variable of the physical mark length includes the following formula:

$$\begin{bmatrix} dPhyL_1 \\ dPhyL_2 \\ dPhyL_3 \\ \vdots \\ dPhyL_j \\ \vdots \\ dPhyL_M \end{bmatrix} = \begin{bmatrix} v_{11} & v_{12} & v_{13} & \cdots & v_{1j} & \cdots & v_{1M} \\ v_{21} & v_{22} & v_{23} & \cdots & v_{2j} & \cdots & v_{2M} \\ \vdots & \vdots & \vdots & \ddots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & v_{i3} & \cdots & v_{ij} & \cdots & v_{iM} \\ \vdots & \vdots & \vdots & \cdots & \vdots & \ddots & \vdots \\ v_{N1} & v_{N2} & v_{N3} & \cdots & v_{Nj} & \cdots & v_{NM} \end{bmatrix}^{-1} \bullet \begin{bmatrix} \Delta\mathrm{MarkRL}_1 \\ \Delta\mathrm{MarkRL}_2 \\ \vdots \\ \Delta\mathrm{MarkRL}_i \\ \vdots \\ \Delta\mathrm{MarkRL}_N \end{bmatrix}$$

wherein the writing parameters which need optimization are j=1,2, ···M;

dPhyLj represents the variation amount of the physical length of the mark, which is directly influenced by the j^{th} writing parameter which needs optimization.

ΔmarkRLi represents the measured i^{th} variation amount of the mark runlength;

in the transformation matrix, the coefficient v_{ij} is the influence coefficient, which represents the influence of parameter j on mark i, $v_{ij} = -jp + 1$ when parameter j influences mark i directly; $v_{ij} = -jp + 1$ when parameter j does not influence mark i directly;

jp represents the percentage of the numbers of the mark samples influenced directly by the j^{th} writing parameter which needs optimization in the whole mark samples.

10. The method according to claim 9, wherein the determinant of said transformation matrix of the influence coefficients doesn't equal zero, which is written as:

$$\det\begin{bmatrix} v_{11} & v_{12} & v_{13} & \cdots & v_{1j} & \cdots & v_{1M} \\ v_{21} & v_{22} & v_{23} & \cdots & v_{2j} & \cdots & v_{2M} \\ \vdots & \vdots & \vdots & \ddots & \vdots & \vdots & \vdots \\ v_{i1} & v_{i2} & v_{i3} & \cdots & v_{ij} & \cdots & v_{iM} \\ \vdots & \vdots & \vdots & \cdots & \vdots & \ddots & \vdots \\ v_{N1} & v_{N2} & v_{N3} & \cdots & v_{Nj} & \cdots & v_{NM} \end{bmatrix} \neq 0$$

11. The method according to claim 4, wherein the step (b2) comprising the following steps:

(b2.1) doing writing experiments with a plurality of parameter values (Pr) in order to optimize the writing parameter (r);

(b2.2) measuring the variation amount ΔMarkRLs of the length of the mark (s)'s movement, which is influenced directly by the writing parameter (r), to acquire the function relationship ΔMarkRLs = f1(Pr) between ΔMarkRLs and the parameter value (Pr);

(b2.3) measuring the variation amount ΔmarkRLt of the length of the mark (t)'s movement, which is not influenced directly by the writing parameter (r), to acquire the function relationship ΔmarkRLt = f2(Pr) between ΔmarkRLt and the parameter value (Pr);

(b2.4) subtracting the result of step (b2.3) from the result of step (b2.2), to

acquire the relationship dPhyLr = ΔMarkRLs - ΔMarkRL t= f1(Pr) - f2(Pr) = f1-2(Pr) = f(Pr0+dPr) between the variation amount (dPhyLr) of the physical length of the mark and the parameter value (Pr) which needs optimization (wherein Pr0 is the original value of the writing parameter(r), dPr is the variation amount of the parameter value).

12. The method according to claim 3, further comprising a step:

writing a random data on said optical disc.

13. The method according to claim 3, further comprising a step:

comparing the variable of each mark runlength with an predetermined optimization objection, to confirm if the continued optimization is needed.

14. The method according to claim 13, further comprising a step:

determining the current parameter value as the parameter value which will be written to optical disc when the continued optimization is not needed.

15. The method according to any of claims 3-14, wherein said writing parameters comprise a power of the laser pulses.

16. The method according to any of claims 3-14, wherein said writing parameters comprise a starting time and a stopping time of the laser pulses.

17. The method according to any of claims 3-14, wherein a square-shaped writing strategy, a "dog frame" wave-shaped writing strategy, a "1T writing strategy" or a

"2T writing strategy" are adopted for said optical disc-writing.